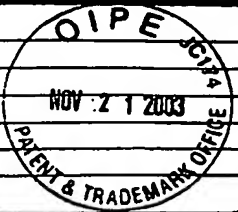


Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| | | | | | |
|--|---|----|---|--|--|
| Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: NOV 21 2003 (use as many sheets as necessary) | | | | Complete if Known Application Number: 10/663,769 Filing Date: 09/17/2003 First Named Inventor: Zhonghua ZHOU Group Art Unit: Unassigned Examiner Name: Unassigned Attorney Docket Number: 047297-0138 | |
| Sheet | 1 | of | 1 |  | |

| U.S. PATENT DOCUMENTS | | | | | | |
|-----------------------|-----------------------|----------------------|-----------------------------------|---|--|---|
| Examiner Initials* | Cite No. ¹ | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Number | Kind Code ² (if known) | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| FOREIGN PATENT DOCUMENTS | | | | | | | | |
|--------------------------|-----------------------|-------------------------|---------------------|-----------------------------------|--|--|---|----------------|
| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | | | Name of Patentee or Applicant of Cited Documents | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | T ⁶ |
| | | Office ³ | Number ⁴ | Kind Code ⁵ (if known) | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| NON PATENT LITERATURE DOCUMENTS | | | | | |
|---------------------------------|-----------------------|--|--|--|----------------|
| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published. | | | T ⁶ |
| hh | B1 | Nikkei Mechanical, October 2001, pages 36-39, no. 565. (attached is an English translation of the important passages (1-3)). | | | |
| hh | B2 | R. ASahi et al., "Visible-Light Photocatalysis in Nitrogen-Doped Titanium Oxides", Science, July 13, 2001, pages 269-271, vol. 293. | | | |
| | | | | | |
| | | | | | |

| | | | |
|--------------------|---|-----------------|-------|
| Examiner Signature |  | Date Considered | 09/05 |
|--------------------|---|-----------------|-------|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, PO Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

MODIFIED PTO/SB/08 (08-00)
Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B/PTO
**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

Date Submitted: **FEB 22 2005**

(use as many sheets as necessary)

Complete if Known

| | |
|------------------------|---------------|
| Application Number | 10/663,768 |
| Filing Date | 09/17/2003 |
| First Named Inventor | Zhonghua ZHOU |
| Group Art Unit | 1773 |
| Examiner Name | Unassigned |
| Attorney Docket Number | 047297-0138 |

Sheet

1

of

1

U.S. PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
|--------------------|-----------------------|----------------------|-----------------------------------|---|--|---|
| | | Number | Kind Code ² (if known) | | | |
| | C1 | 4,668,501 | | SHIBUTA ET AL. | 05-26-1987 | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

FOREIGN PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | | | Name of Patentee or Applicant of Cited Documents | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | T ⁶ |
|--------------------|-----------------------|-------------------------|---------------------|-----------------------------------|--|--|---|----------------|
| | | Office ³ | Number ⁴ | Kind Code ⁵ (if known) | | | | |
| | C2 | EP | 1 205 244 | A1 | KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO | 05-15-2002 | | |
| | C3 | WO | 02/38272 | A1 | NEOMAT S.A. | 05-16-2002 | | |
| | C4 | EP | 0 997 191 | A1 | ECODEVICE LABORATORY CO., LTD. | 05-03-2000 | | |
| | C5 | EP | 0 870 530 | A1 | NIPPON SHEET GLASS CO., LTD. | 10-14-1998 | | |
| | | | | | | | | |
| | | | | | | | | |

NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ⁶ |
|--------------------|-----------------------|--|----------------|
| | C6 | Patent Abstracts of Japan, Vol. 2000, No. 01, 31 January 2000, JP 11-292537, 26 October 1999. | |
| | C7 | Patent Abstracts of Japan, Vol. 2000, No. 03, 30 March 2000, JP 11-333300, 7 December 1999. | |
| | C8 | C. Lettmann et al., "Visible light photodegradation of 4-chlorophenol with a coke-containing titanium dioxide photocatalyst", Applied Catalysis B: Environmental, Vol. 32, 2001, pages 215-227. | |
| | | | |
| | | | |

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| | | | | | |
|--|--|--|--|--------------------------|---------------|
| Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: September 17, 2003 (use as many sheets as necessary) | | | | Complete if Known | |
| | | | | Application Number | Unassigned |
| | | | | Filing Date | 09/17/2003 |
| | | | | First Named Inventor | Zhonghua ZHOU |
| | | | | Group Art Unit | Unassigned |
| | | | | Examiner Name | Unassigned |
| Sheet 1 of 1 | | | | Attorney Docket Number | 047297-0138 |

| U.S. PATENT DOCUMENTS | | | | | | |
|-----------------------|-----------------------|----------------------|-----------------------------------|---|--|---|
| Examiner Initials* | Cite No. ¹ | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Number | Kind Code ² (if known) | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| FOREIGN PATENT DOCUMENTS | | | | | | | | |
|--------------------------|-----------------------|-------------------------|---------------------|-----------------------------------|--|--|---|----------------|
| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | | | Name of Patentee or Applicant of Cited Documents | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | T ⁶ |
| | | Office ³ | Number ⁴ | Kind Code ⁵ (if known) | | | | |
| ph | A1 | JP | 2001-190953 | A | SUMITOMO CHEM CO., LTD. | 07/17/2001 | | Transl. |
| ph | A2 | JP | 2001-207082 | A | TOYOTA CENTRAL RES & DEV LAB INC. | 07/31/2001 | | Transl. |
| ph | A3 | JP | 2001-072419 | A | SUMITOMO CHEM CO., LTD. | 03/21/2001 | | Transl. |
| ph | A4 | JP | 2001-212457 | A | KANKYO DEVICE KENKYUSHO:KK | 08/07/2001 | | Transl. |
| ph | A5 | JP | 7-187852 | A | TOSHIBA CERAMICS CO., LTD. | 07/25/1995 | | Transl. |

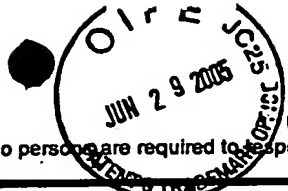
| NON PATENT LITERATURE DOCUMENTS | | | |
|---------------------------------|-----------------------|--|----------------|
| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ⁶ |
| | | | |
| | | | |
| | | | |

| | | | |
|--------------------|---|-----------------|-------|
| Examiner Signature |  | Date Considered | 09/05 |
|--------------------|---|-----------------|-------|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, PO Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450.



 JUN 29 2005

MODIFIED PTO/SB/08 (08-00)

Approved for use through 10/31/2002. OMB 0851-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

Date Submitted: **FEB 22 2005**

(use as many sheets as necessary)

Complete if Known

| | |
|------------------------|---------------|
| Application Number | 10/663,769 |
| Filing Date | 09/17/2003 |
| First Named Inventor | Zhonghua ZHOU |
| Group Art Unit | 1773 |
| Examiner Name | Unassigned |
| Attorney Docket Number | 047297-0138 |

Sheet **1** of **1**

U.S. PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
|--------------------|-----------------------|----------------------|-----------------------------------|---|--|---|
| | | Number | Kind Code ² (if known) | | | |
| <i>hh</i> | C1 | 4,668,501 | | SHIBUTA ET AL. | 05-26-1987 | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

FOREIGN PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | | | Name of Patentee or Applicant of Cited Documents | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | T ⁶ |
|--------------------|-----------------------|-------------------------|---------------------|-----------------------------------|--|--|---|----------------|
| | | Office ³ | Number ⁴ | Kind Code ⁵ (if known) | | | | |
| <i>hh</i> | C2 | EP | 1 205 244 | A1 | KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO | 05-15-2002 | | |
| | C3 | WO | 02/38272 | A1 | NEOMAT S.A. | 05-16-2002 | | |
| | C4 | EP | 0 997 191 | A1 | ECODEVICE LABORATORY CO., LTD. | 05-03-2000 | | |
| <i>hh</i> | C5 | EP | 0 870 530 | A1 | NIPPON SHEET GLASS CO., LTD. | 10-14-1998 | | |
| | | | | | | | | |
| | | | | | | | | |

NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ⁶ |
|--------------------|-----------------------|--|----------------|
| <i>hh</i> | C6 | Patent Abstracts of Japan, Vol. 2000, No. 01, 31 January 2000, JP 11-292537, 26 October 1999. | |
| <i>hh</i> | C7 | Patent Abstracts of Japan, Vol. 2000, No. 03, 30 March 2000, JP 11-333300, 7 December 1999. | |
| <i>hh</i> | C8 | C. Lettmann et al., "Visible light photodegradation of 4-chlorophenol with a coke-containing titanium dioxide photocatalyst", Applied Catalysis B: Environmental, Vol. 32, 2001, pages 215-227. | |
| | | | |
| | | | |

Examiner Signature

hhhe

Date Considered

09/05

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.